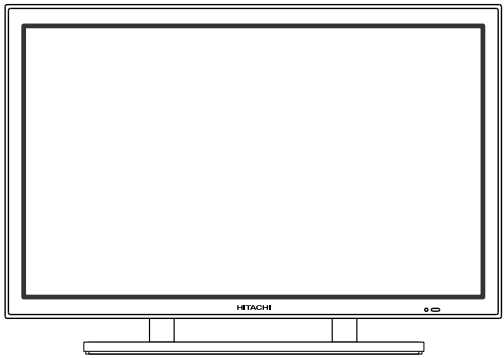
HITACHI

Color Plasma Display Monitor

Model PD1

42PMA400E
CMP4202E
CMP4121HDE

USER MANUAL
MANUEL UTILISATEUR
BEDIENUNGSANLEITUNG
MANUAL DE USUARIO
MANUALE D'USO



The stand is an option.
Le socle est en option.
Der Stander ist Sonderzubehor.
Il supporto di appoggio è un accessorio opzionale.
El soporte es opcional.

READ THE INSTRUCTIONS INSIDE CAREFULLY.
KEEP THIS USER MANUAL FOR FUTURE REFERENCE.

For future reference, record the serial number of your monitor.

SERIAL NO.

The serial number is located on the rear of the monitor.

This monitor is ENERGY STAR® compliant when used with a computer equipped with VESA DPMS.
The ENERGY STAR® emblem does not represent EPA endorsement of any product or service.
As an ENERGY STAR® Partner, Hitachi,Ltd. has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.

ENGLISH

USER'S MANUAL

Thank you very much for purchasing the HITACHI Plasma Display Monitor.
Before using your monitor, please carefully read the "SAFETY GUIDELINES" and this "USER'S MANUAL" so you will know how to operate the monitor properly. Keep this manual in a safe place. You will find it useful in the future.

Notes on Installation Work:
This product is marketed assuming that it is installed by qualifed personnel with enough skill and competence. Always have an installation specialist or your dealer install and set up the product. HITACHI cannot assume liabilities for damage caused by mistake in installation or mounting, misuse, modification or a natural disaster.

Note for Dealers:
After installation, be sure to deliver this manual to the customer and explain to the customer how to handle the product.

FEATURES

Large-screen, high-definition plasma display panel

The 42-inch color plasma display panel, with a resolution of 1024 (H) x 1024(V) pixels, creates a high-definition, large-screen (aspect ratio : 16:9) and low-profile flat display. Free from electromagnetic interferences from geomagnetic sources and ambient power lines, the panel produces high-quality display images free from color misconvergence and display distortion.

Multimedia input support

Two mini D-sub terminals have been provided for RGB input. It is possible to switch between RGB signals and component signals* from the Menu screen; therefore, use is possible with equipment ranging from personal computers to imaging devices. A speaker output terminal has also been provided.

* It is possible when the VIDEO unit of an option is inserted.

Multiscan converter and Flexible Control LSI

A wide range of personal computer signals can be handled, from 640 x 400, 640 x 480 VGA to 1600 x 1200 UXGA.

Easy-to-use remote controller and on screen display system

The remote controller included eases the work of setting display controls. Further, the on-screen display system, displays the status of signal reception and display control settings in an easy-to-view fashion.

Power saving system

The International ENERGY STAR® power saver feature saves power consumption automatically when input signals are not available. When connected to a VESA DPMS-compliant PC, the monitor cuts its power consumption while it is idle.

About the Optional Video Unit

The following functions can be obtained by connecting the optional video unit.

(1) A composite/S terminal and component terminal have been added. A composite video output terminal is also provided for use as a loop-through function.
(2) A wide range of devices other than personal computers can also be connected.
(3) A component input is attained at a D-Sub terminal (RGB1, RGB2).
(4) The SCART signal of the European standard becomes possible.

Options

Ask your local retail dealer for further details.

1. Desktop stand: CMPAD05
2. Wall-mount unit:
   Horizontal mount: CMPAK05
   Vertical/horizontal mount: CMPAK15
   These are brackets used to mount this device on a wall.
3. Ceiling-suspension unit: CMPAT05
4. Plasma monitor speaker: CMPAS04 (width:10.2mm)]
   This is a two-way speaker with one 2.5cm dome type tweeter and two 8cm round type woofers.
5. Video unit: CMPAV14
   An expansion unit for viewing video with this device.

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Notes about This Manual

- The information in this manual is subject to change without notice.
- While meticulous care has been taken in the preparation of this manual, you are requested to notify your dealer or us should you have any comments, views or questions about our product.
- Fully understand the prerequisites to using the product, such as hardware and software specifications and constraints, in using the product. We are not held liable for damages caused by improper handling of the product.
- Reproduction of this manual in whole or in part without our prior written permission is prohibited.
- The product names mentioned in this manual may be trademarks or registered trademarks of their respective owners.

SAFETY GUIDELINES

This monitor is designed to be safe to use. However, fire or serious injury may occur unless you use this monitor in the proper way.
Please follow the instructions shown below in order to avoid injury.

Keep the safety guideline

Do not use the monitor if it fails

If you find something unusual ,

* If smoke comes out,
* If there is a strange smell,
* If water enters the case,
* If you drop the monitor or damage the cabinet,

(1) Turn off the monitor
(2) Disconnect the power plug from the mains
(3) Request repair

Warning and Caution are indicated in this guide and monitor itself.

⚠ WARNING Fire or electric shock may cause death or serious injury unless you follow the instruction.

⚠ CAUTION Electric shock or other accidents may cause serious injury or damage of your properties.

⚠ WARNING Fire or electric shock may cause death or serious injury unless you follow the instruction below.

- **If something smells strange or smoke comes from the monitor:**
  Turn off the monitor and disconnect the power plug from the mains immediately.
  Contact service center after confirming that the smoking has stopped.
  If you continue to operate the monitor with such abnormal condition, it may cause fire or you may receive an electric shock.

- **Do not drop water or a foreign substance on to the monitor.**
  If you drop water or a foreign substance on to the monitor, it may cause fire or an electric shock.
  If it happens turn off the monitor and disconnect the power plug from the mains and ask service center for instruction.

- **Do not put the monitor on an unstable place.**
  If you put the monitor on an uneven or unstable place, it may fall down and you may be injured.
  Put the monitor on a flat surface strong enough to take the weight.

- **Do not apply shock to the monitor.**
- **Do not use monitor if glass is broken or damaged.**
  If there is no picture appearance, broken glass , smoking or something smells after applying shock to the monitor, turn off the monitor and disconnect the power plug from the mains immediately. Then, call the service center.
  If you continue to operate the monitor with such abnormal conditions, it may cause fire or you may receive an electric shock.

- **Do not disassemble or modify the monitor.**
  There is high voltage portion inside of the monitor. Disassembling or modification of the monitor may cause fire or electric shock.

- **Do not use the monitor in wet environment.**
  If you use the monitor in a wet place such as bath or shower room, it may cause fire or electric shock.

- **Do not damage or modify the power cord.**
  If you put something heavy on the power cord or pull, squeeze, heat the cord, it may be damaged and it may cause fire or electric shock.
  If the power cord is damaged, call service center.

SAFETY GUIDELINES(continued)

⚠ WARNING Fire or electric shock may cause death or serious injury unless you follow the instruction.

• The enclosed power cord must be used!

Failure to do so may cause electric shock hazard or fire hazard.
In USA/Canada, use a UL LISTED/CSA LABELLED or CERTIFIED power cord set meeting the following specifications :
Rating: min. 125V, 10A , Length: max. 3.0m , Type: SVT or SJT
Plug type: NEMA 5-15P figure, Parallel blade, Grounding type
In Europe or 200V area, a proper European standard approved power cord is to be used with this monitor.
For a rated current up to 6 A, a type not lighter than H05VV-F 3G 0.75 mm^2 or H05VVH2-F 3G 0.75 mm^2 must be used.

• Use only the correct voltage power outlet with safety ground connection!

100 - 120 V for USA, Canada, etc.
200 - 240 V for Europe, etc.
(This monitor will automatically adjust to the input voltage 100 - 120 / 200 - 240V.)

• Be careful of power cord connection!

Before inserting the plug of the power cord into a socket of the correct voltage, check that the connection portion of the power cord is clean (with no dust). Then, insert the plug of power cord into the socket firmly, otherwise it may cause electric shock or fire hazard.

• Do not touch the power plug when lightning is close to you.

You may receive an electric shock.

• Do not touch the power plug with wet hands.

You may receive an electric shock.

• Do not obstruct a ventilation hole.

If you obstruct a ventilation hole during the operation of the monitor or just after switching off the power, it may cause a fire or electric shock due to heating up the monitor.
- Do not put the monitor screen side up.
- Do not put the monitor on a shelf or in a cabinet without adequate ventilation of 4 inches top, sides, bottom and rear.
- Do not put the monitor on a carpet or mattress.
- Do not cover the monitor with a cloth.

• FOR THE CUSTOMERS IN THE U.K.

THIS PRODUCT IS SUPPLIED WITH A TWO PIN MAINS PLUG FOR USE IN MAINLAND EUROPE. FOR THE U.K. PLEASE REFER TO THE NOTES ON THIS PAGE.

IMPORTANT FOR UNITED KINGDOM

WORDING FOR CLASS I EQUIPMENT INSTRUCTION BOOKS AND LABELS

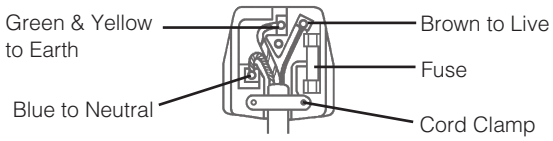
The mains lead on this equipment is supplied with a molded plug incorporating a fuse, the value of which is indicated on the pin face of the plug. Should the fuse need to be replaced, an ASTA or BSI approved BS 1362 fuse must be used of the same rating. If the fuse cover is detachable never use the plug with the cover omitted. If a replacement fuse cover is required, ensure it is of the same colour as that visible on the pin face of the plug. Fuse covers are available from your dealer.
DO NOT cut off the mains plug from this equipment. If the plug fitted is not suitable for the power points in your home or the cable is too short to reach a power point, then obtain an appropriate safety approved extension lead or consult your dealer.
Should it be necessary to change the mains plugs, this must be carried out by a competent person, preferably a qualified electrician.
If there is no alternative to cutting off the mains plug, ensure that you dispose of it immediately, having first removed the fuse, to avoid a possible shock hazard by inadvertent connection to the mains supply.

WARNING: THIS EQUIPMENT MUST BE EARTHED

IMPORTANT

The wires in the mains lead are coloured in accordance with the following code :
Green and Yellow = Earth, Blue = Neutral, Brown = Live.
As these colours may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured GREEN and YELLOW must be connected to the terminal in the plug which is marked with the letter E or by the earth symbol ⏚ or coloured GREEN or GREEN and



YELLOW.
The wire coloured BLUE must be connected to the terminal marked with the letter N or coloured BLUE or BLACK. The wire coloured BROWN must be connected to the terminal marked with the letter L or coloured BROWN or RED.

SAFETY GUIDELINES(continued)

⚠ CAUTION Electric shock or other accidents may cause serious injury or damage to your property.

- **Disconnect the power plug from the mains when you move the monitor.**
  Moveing the monitor without disconnecting the power plug from the mains may damage the cord and cause a fire or electric shock. You are advised to move the monitor with two persons.
  Handle with care when you move the monitor, particularly take care of glass screen.

- **When you disconnect the power plug.**
  You have to grasp the power plug itself, do not pull the power cord.
  If you pull the power cord, you may damage it and it may cause a fire or an electric shock.
  Do not touch the power plug just after disconnecting it from the mains or you may receive electric shock.

- **Disconnect the power plug from the mains when you don't use the monitor for a long time.**
  This is for your safety.

- **Do not put the monitor in atmosphere with soot, steam, high humidity, and dust.**
  It may cause a fire or electric shock.

- **Do not put the monitor in high temperature atmosphere.**
  Do not put the monitor in the place exposed to the direct rays of the sun for a long period of time. Heat may cause a fire, transformation, or melting of the monitor.

- **Do not put things on the monitor.**
  Do not put things on the monitor or give some shock to the monitor.
  The monitor may fall down or drop from a desk. And it may cause injury.

⚠ CAUTION You may have serious injury or your property may be damaged unless you follow the instruction below.

- **Do not coil or wind the power cord.**
  This may cause excessive heat resulting in a fire.

- **Caution for 200 - 240V operation only**
  This equipment relies on the protective devices in the building installation for short - circuit and over - current protection. Refer to the following table for the suitable number and location of the protective devices which should be provided in the building installation.

INFORMATIVE EXAMPLES OF PROTECTIVE DEVICES IN SINGLE - PHASE EQUIPMENT OR SUB - ASSEMBLIES

	Protection against	Minimum number of fuses or circuit - breaker poles	Location
Case A: Equipment to be connected to POWER SYSTEMS with earthed neutral reliably identified, except for Case C below.	Earth faults	1	Phase conductor
	Overcurrent	1	Either of the two conductors
Case B: Equipment to be connected to any supply, including IT POWER SYSTEMS and supplies with reversible plugs, except for Case C below.	Earth faults	2	Both conductors
	Overcurrent	1	Either of the twoconductors
Case C: Equipment to be connected to 3 - wire power systems with earthed neutral reliably identified.	Earth faults	2	Each phase conductor
	Overcurrent	2	Each phase conductor

Verify that the protective devices in the building installation meets the conditions in the table prior to installing the equipment.

- **Remove the power cord for complete isolation!**
  For complete isolation from the mains, remove the power cord from the monitor or from the wall socket.

SAFETY GUIDELINES(continued)

PRECAUTIONS

• Installation environment

Do not obstruct a ventilation hole.
Do not put the monitor on carpet or blanket, or near a curtain which has a possibility of obstructing a ventilation hole of the monitor.

Do not put the monitor in the following places.
- Hot places such as near heater, place exposed to the direct rays of the sun.
- A place where the temperature is widely changing.
- Places with soot, dust or high humidity.
- Poor air ventilation place.
- Place near fire.
- A wet place such as bathroom, or shower room.
- Place where you can trip over it.
- Always vibrating or strongly vibrating places.
- Distorted or unstable places.

• How to view the monitor.

If you use the monitor in too dark a room, your eyes may become tired.
Please use it in a reasonably bright room.
Avoid direct rays of the sun to the screen in order to prevent eye fatigue.
Your eyes will get fatigued after viewing the monitor for long period of time.
Relax your eyes by viewing away from the monitor from time to time.
Please watch the monitor in downward direction.

• Note on image retention

The plasma monitor illuminates phosphor to display images. The phosphor has a finite illumination life. After extended periods of illumination, the brightness of the phosphor would be degraded to such extent that still images would image retention that part of the screen as grayed-out images.
Tips to prevent such image retention are:
- Do not display images having sharp brightness differences or high-contrast images, such as monochrome characters and graphic patterns, for long.
- Do not leave stationary images appearing for long, but try to refresh them at appropriate intervals of time, or try to move them using screen saver function.
- Turn down the contrast and brightness controls.

• How to clean the monitor.

Before cleaning the monitor, turn off the monitor and disconnect the power plug from the mains.
When cleaning the monitor, do not spray directly the screen or cabinet with cleaner.
Use a clean, dust free, dry and soft cloth. If it is not enough, then use a cloth with non-alcoholic or non-ammonia detergent.
Do not rub the surface of the screen with ball-point-pen or screw-driver etc.

• Prevention of an obstacle to Radio receivers

This monitor has been designed pursuant to the EN55022 class B Rules. This is to prevent a problem to Radio receivers.
- Keep the monitor away from Radio.
- Adjust Radio antennas in order for the monitor not to receive interference.
- The antenna cable of Radio should be kept away from the monitor.
- Use a coaxial cable for antenna.

You can check if this monitor influences Radio receivers by turning off all other equipment other than the monitor.
If you find a problem receiving Radio when using the monitor, check the instructions mentioned above.

• Precautions for the monitor

- Use the attached signal-cable when you connect the monitor with PC equipment.
  Do not use other signal-cables.
- Confirm the connector is fixed tightly when the signal cable is connected.
  Also confirm the screws on the connector are tightened.
- Plug the power cord of the monitor into a different socket from that for other equipment, such as Radio etc..
- Use a plug with ground terminal and make sure that it connects to the ground.

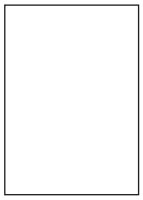
• Precaution during transportation

Please pay attention when you transport this monitor because it is heavy.
Furthermore, use the original carton box and its packaging materials when the monitor is transported.
Failure to transport the monitor in any carton except the original carton may result in damage to the monitor.
Save the original carton box and all packing material.

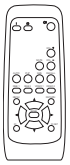
STANDARD ACCESSORIES

This product is complete with the display monitor, plus the accessories shown below.

• If any of these accessories is missing, please contact your dealer.



User manual
(this book)



Remote-control
transmitter

Size AA
batteries x 2

Power cable

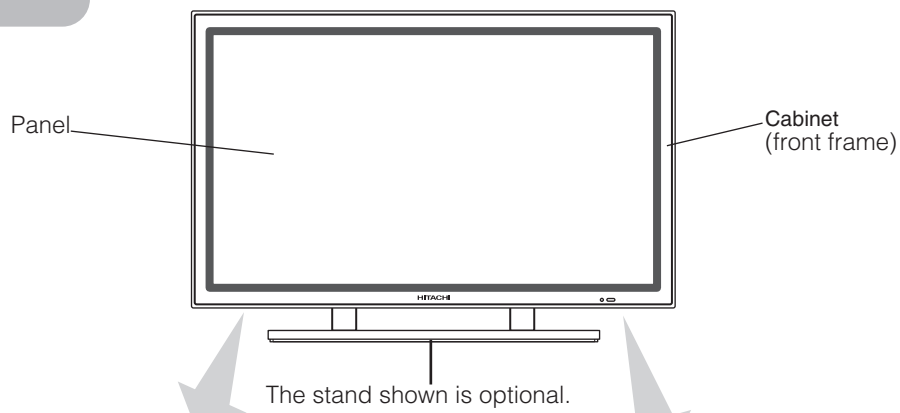
• Read the user manual (this book) and keep them in a safe place for handy reference.

•Retain the packing materials for use in future shipping or relocation.

Component Names

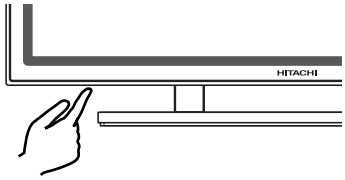
Main Unit

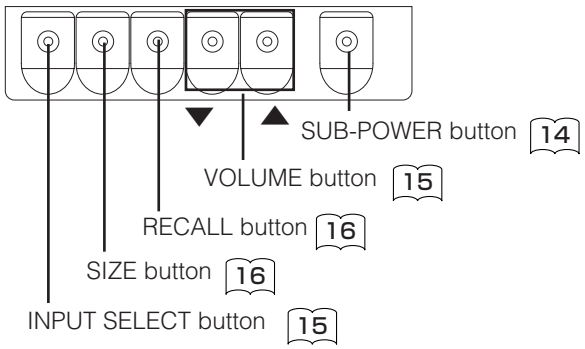
Front

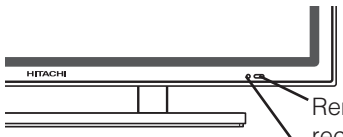


Control panel

- Adjustment buttons are located on the bottom.
- The back cover is provided with indications to distinguish the adjustment buttons.

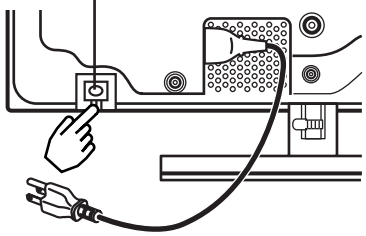






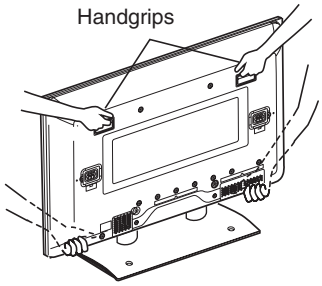
- The main power switch is located at the back, on the lower surface.

Main power switch 14

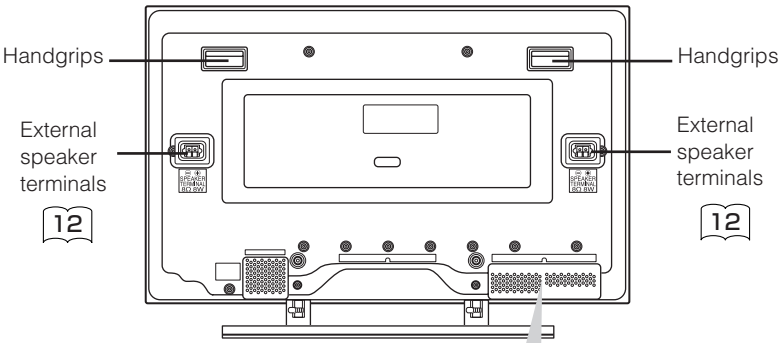


Caution when moving the main unit

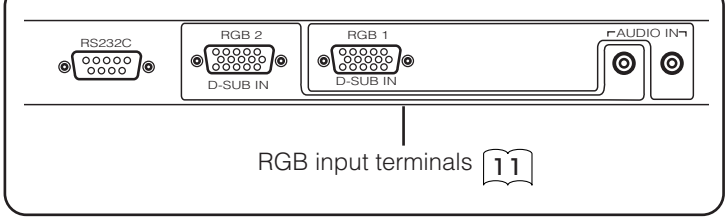
- As this product is heavy, whenever it is moved, two people are required to transport it safely.
- Whenever the unit is moved it should be lifted forwards using the two handgrips at the back, and the unit should then be held at the base on both sides for stability.



Rear

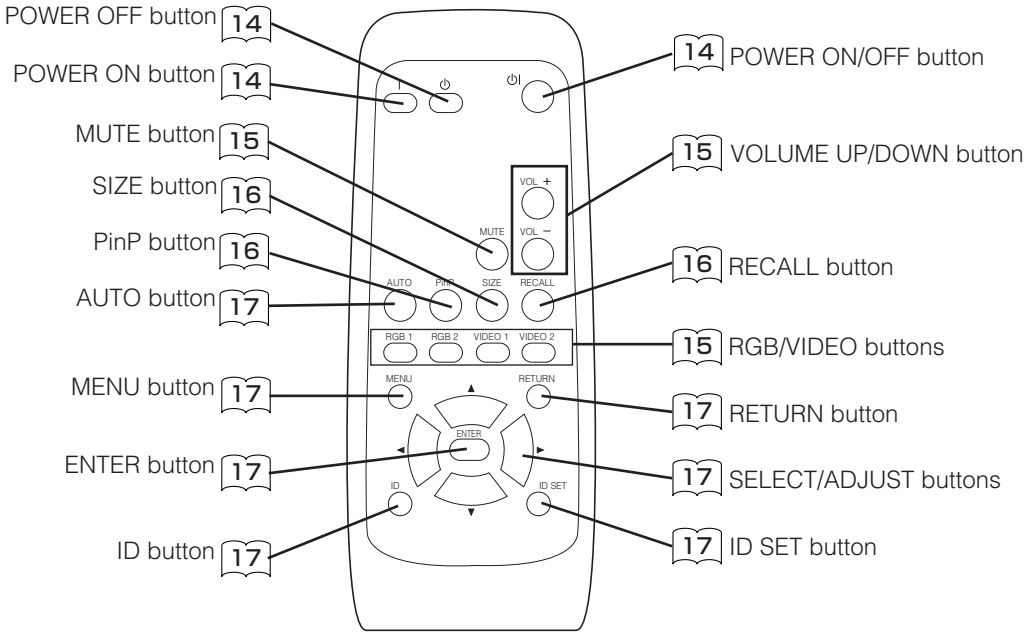


External device connection terminals



Component Names (continued)

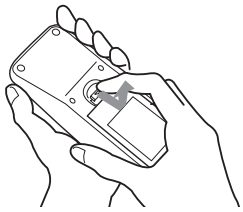
Remote controller



Loading Batteries

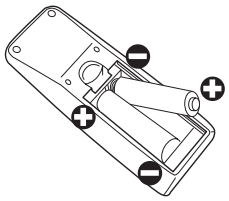
1. Open the battery cover.

- Slide back and remove the battery cover in the direction of the arrow.



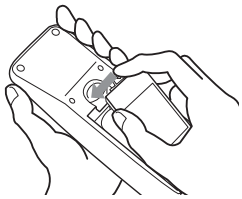
2. Load batteries.

- Load two Size AA batteries included observing the correct polarities.



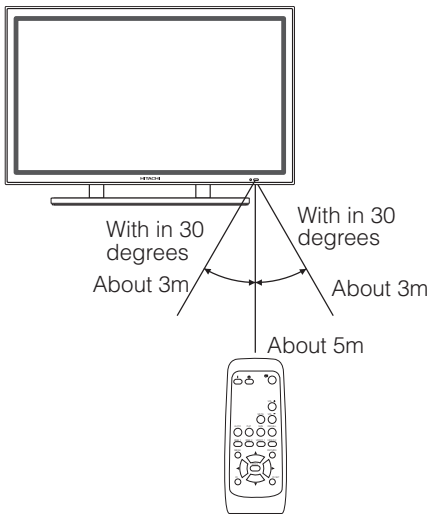
3) Close the battery cover.

- Replace the battery cover in the direction of the arrow and snap it back into place.



Handling the Remote Controller

Use the remote controller within about 5 m from front of the unit's remote-control sensor and within 30 degrees on both sides.



⚠CAUTIONS

- Do not use new and old batteries together. The batteries could explode or leak, resulting in fires, physical injury, or stains.
- When loading batteries, observe their correct polarities as marked on the product. If loaded in the wrong direction, the batteries could explode or leak, resulting in fires, physical injury, or stains.

TIPS

- Do not drop or impact the remote controller.
- Do not splash the remote controller with water or put it on a wet object to avoid possible failures.
- Before leaving the remote controller out of use for an extended period of time, remove the batteries from it.
- If the remote controller begins to lack responsiveness, replace the batteries.
- Strong light such as direct sunlight impinging on the photoreceptor of the remote control can cause operational failure. Position this unit to avoid direct contact with such light.

INSTALLATION INSTRUCTIONS

Installation

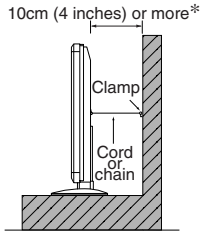
No stand is provided with this product. When installing the monitor, use the optional Desk-top Stand (CMPAD05), Wall Mount Unit (horizontal-mount CMPAK05, vertical/horizontal-mount CMPAK15), or Ceiling Mount Unit (CMPAT05).
The Desk-top Stand has been used for the illustrations in this manual.

⚠WARNING

Use one of the special mount units to install this product. A mount of insufficient strength or inadequate design can cause overturning or dropping and result in fire, electrical shock or injury. Please note that our company assumes absolutely no responsibility for personal injuries or property damage caused by use of other mount units or improper installation.

⚠CAUTIONS

- Installation of the wall mount unit and ceiling mount unit can be dangerous, so do not attempt this work yourself. Ask your dealer to provide the name of a qualified installer.
- In order to prevent an internal temperature increase, maintain a space of 10cm (4 inches : For a desktop set-up) or more between the sides and other objects such as walls, etc., so that the ventilation holes are not blocked.*



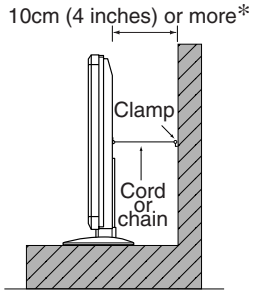
Anti-tumble measures

⚠CAUTIONS

Have this unit mounted in a stable place. Take measures to prevent it from tumbling down to avoid possible physical injury.

Securing to a wall or pillar

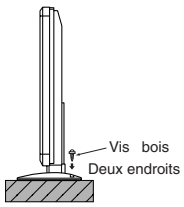
Using a commercially available cord, chain and clamp, secure the set to a firm wall or pillar.



Securing desktop

1)Using wood screws (two), fasten the set to the clamping screw holes on the rear of the stand as shown.

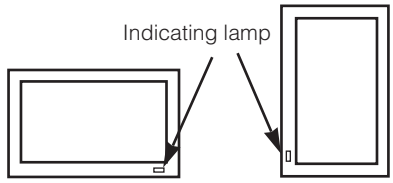
2)Using commercially available wood screws, secure the set firmly in position.



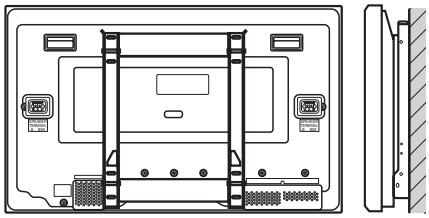
Using the optional vertical-mount unit (CMPAK15)

Using the optional wall-mount unit (CMPAK15) allows set to mount on wall surfaces as shown at below.

1) Make at least four sets of commercial anchor bolts and screws available to meet various kinds of walls to mount on.
2) Read the instructions supplied with the wall-mount unit carefully to optimally locate the plasma display on a wall surface.
3) Prepare the wall surface for anchoring and drilling as needed, as shown in the sketches.
   - Make sure that an adequate wall surface strength and a screw holding strength are available.

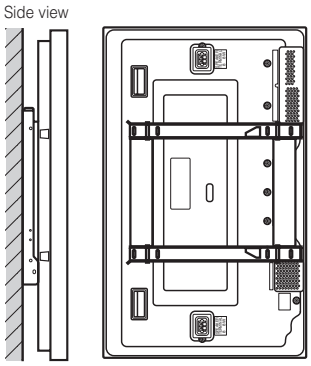


Horizontal mounting



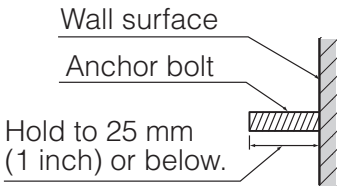
Plasma display outline

Upper left vertical mounting



Plasma display outline

Driving anchor bolts into a wall surface



⚠CAUTIONS

The mounted unit should have the indicating lamp at its bottom. Otherwise, an elevated internal temperature rise could cause the unit to fail or fire.

INSTALLATION INSTRUCTIONS (continued)

Read SAFETY GUIDELINES (3 to 6) carefully to ensure maximum safety before proceeding to these steps:

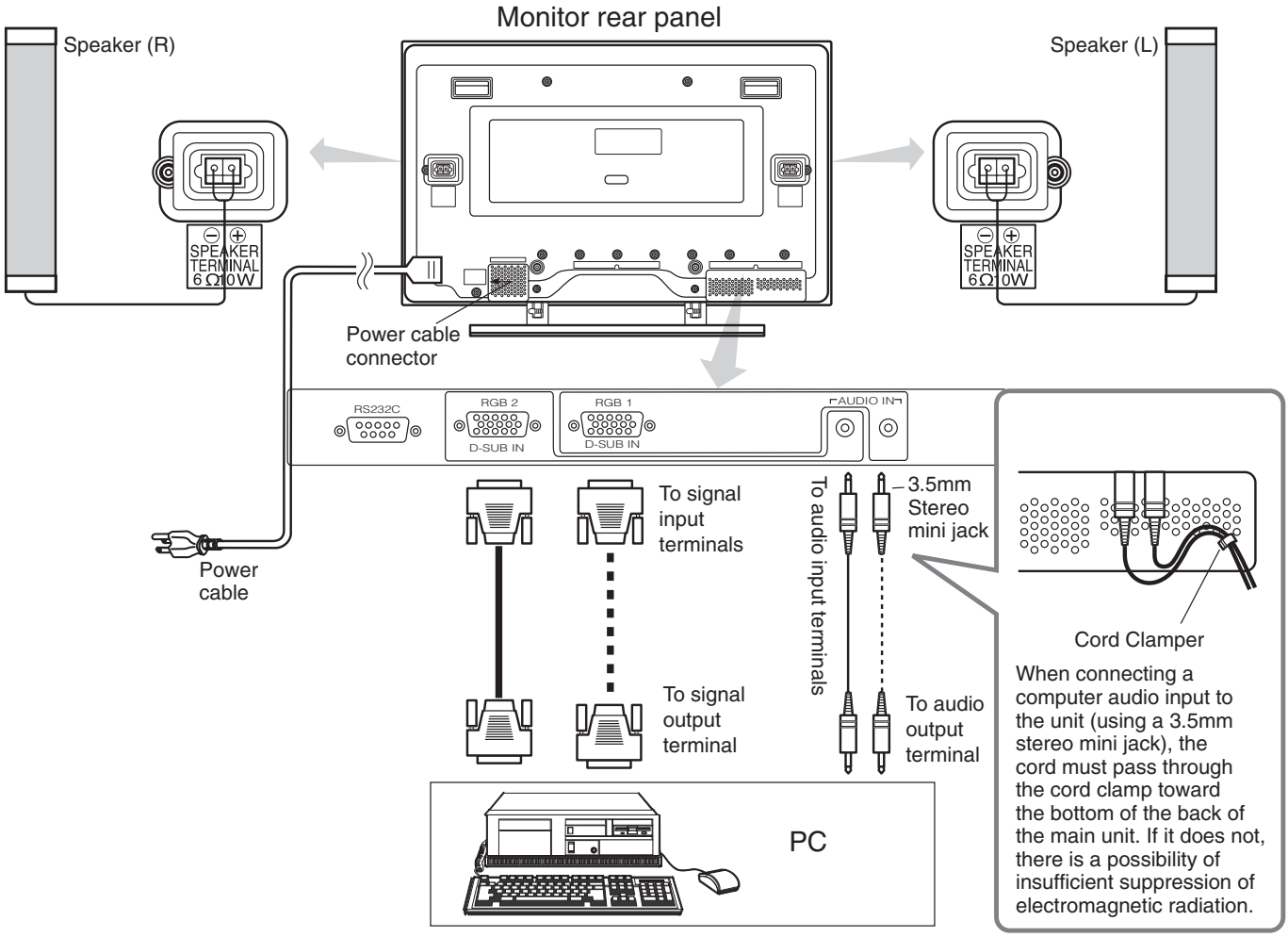
- **Choose an appropriate site and install the product on a level table where the stand is secure.**
  - Install the monitor to have ready access to a power socket available.
- **Make sure that the power switch of this device is turned off.**

Connecting to a PC

(1) Make sure that the display signal of the personal computer to be used is compatible with the specifications of this device.
- See "Product Specifications" concerning the specifications of this device. 31 ~ 32

(2) Make sure that the power switch of the personal computer is turned off.

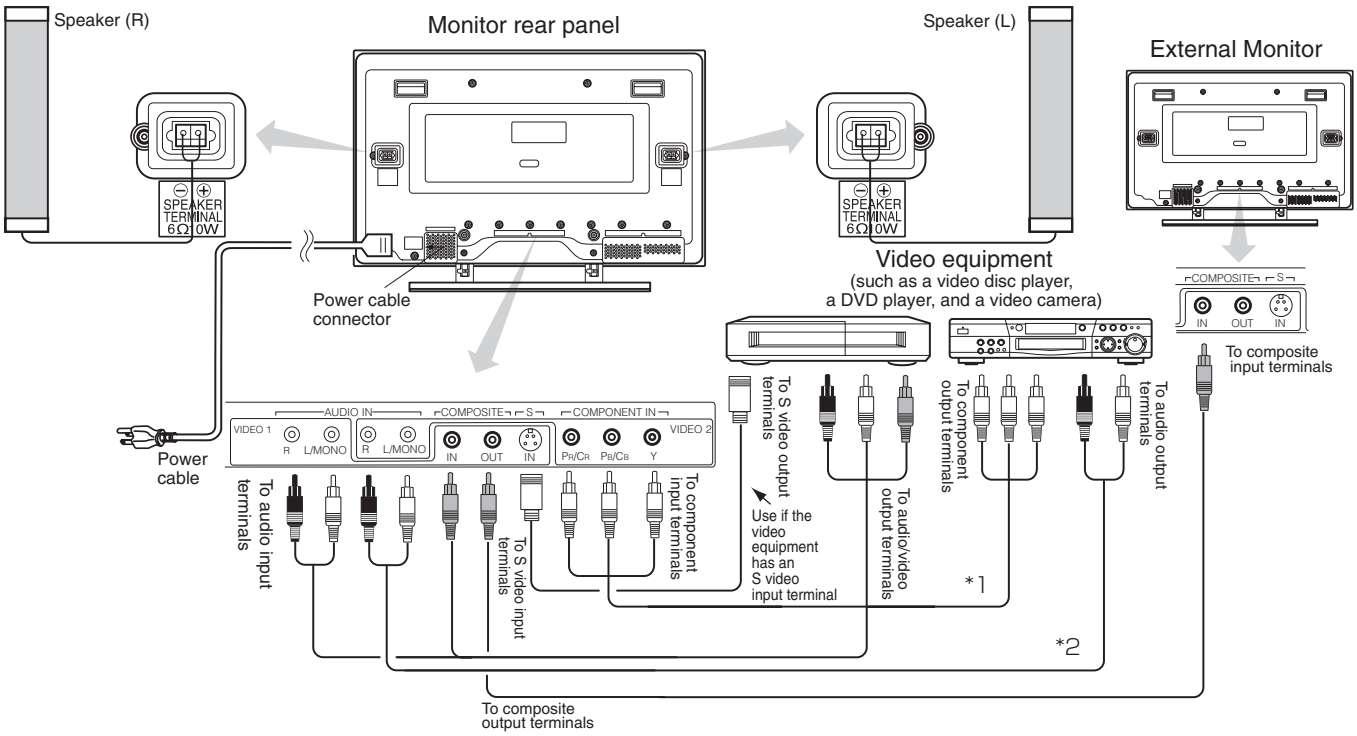
(3) Connect the signal input terminal (RGB 1 or RGB 2) on the rear panel of this device to the display signal output terminal of the personal computer.
- Use a cable that fits the input terminal of this device and the output terminal of the personal computer.
- Depending on the type of personal computer being connected, the use of an optional conversion adapter or the adapter provided with the personal computer may be necessary in some cases. For details, refer to the instruction manual of the personal computer or ask the personal computer manufacturer or your local retail dealer.


Monitor rear panel
Speaker (R)
Speaker (L)
SPEAKER TERMINAL 6Ω10W
SPEAKER TERMINAL 6Ω10W
Power cable connector
RS232C
RGB 2
D-SUB IN
RGB 1
D-SUB IN
AUDIO IN
Power cable
To signal input terminals
To signal output terminal
To audio input terminals
3.5mm Stereo mini jack
To audio output terminal
PC
Cord Clamper
When connecting a computer audio input to the unit (using a 3.5mm stereo mini jack), the cord must pass through the cord clamp toward the bottom of the back of the main unit. If it does not, there is a possibility of insufficient suppression of electromagnetic radiation.

INSTALLATION INSTRUCTIONS (continued)

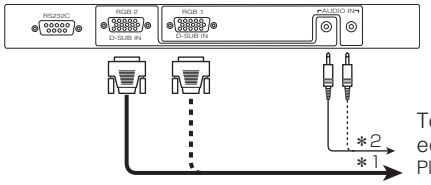
Connecting to a Video Imaging Device (When the optional video unit is installed.)

(1) Make sure that the power switch of the imaging device is turned off.
(2) Use a commercially available cable and connector to connect the signal input terminal on the rear panel of this device and the signal output terminal of the imaging device.



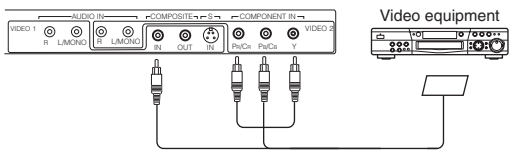
- If video equipment with an S video output terminal is used, cabling by the S video cable is recommended to provide finer video quality. (If an S video input terminal and a video input terminal connect to the monitor at the same time, S video input would govern.)
- If the VIDEO1 OUT terminal is connected to an external monitor with a 75 Ohm terminal, it is possible to view the same image as on the main unit. If an external monitor is not being used, the cable must be removed from the VIDEO OUT terminal. The image will appear white as saturation level is reached.

With RGB component setup



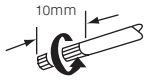
To component video equipment.
Please use the connection cable suitable for the terminal form of video equipment.

With SCART terminal connection (refer to 22)

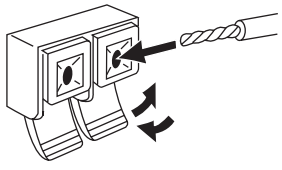


Speaker Connection

This device is equipped with speaker output jacks for use in connecting a speaker system (optional). Refer to the diagram below to connect.



Remove the insulation and twist the bare cable as shown.



Down the tab and insert the cable.
Press the tab up to prevent the cable being pulled out.

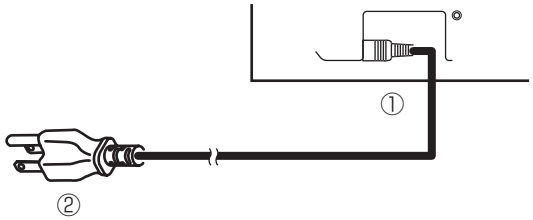
CAUTIONS

When connecting speakers, connect the plus (+) speaker terminal and the plus (+) speaker terminal of this device, and connect the respective minus (-) terminal in the same way. The sound will not be correct if plus (+) and minus (-) terminal are connected to each other.

INSTALLATION INSTRUCTIONS (continued)

Power Cord Connection

Connect the power cord, after completing all other connections.



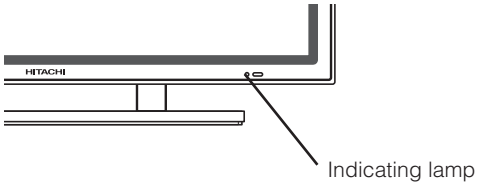
(1) Connect the power cord to this device.
(2) Connect the power cord plug to the power outlet.

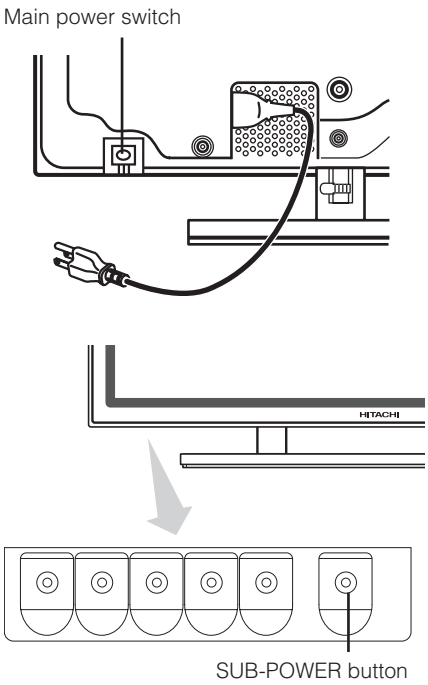
⚠CAUTIONS
- Use only the power cord provided.
- Do not use a power supply voltage other than that indicated (AC100-240V, 50/60Hz) as this may cause fire or electrie shock.

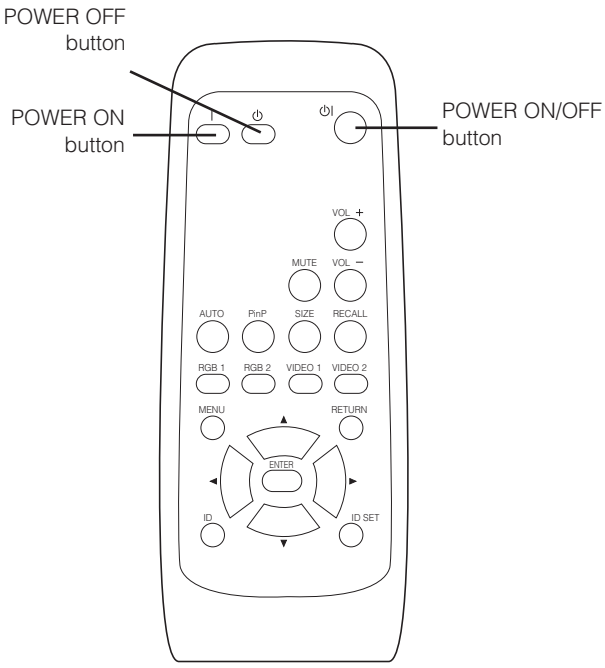
Mounting the Video Unit (option)

Mounting the Speaker Unit (option)

Refer to the respective instruction manuals concerning mounting of the optional video unit and speaker unit.







Turning Power On and Off

- **To turn the monitor power ON, press the main power switch on the monitor main unit to ON, and then press the SUB POWER button or the ON/OFF or ON button on the remote control.**
- **To turn the monitor power OFF, press the SUB POWER button or the ON/OFF or OFF button on the remote control, and then press the main power switch on the monitor main unit to OFF.**
  - During normal use, the main power switch is set in the ON position, and the monitor can then be turned ON/OFF using the SUB POWER button or the ON/OFF button on the remote control.

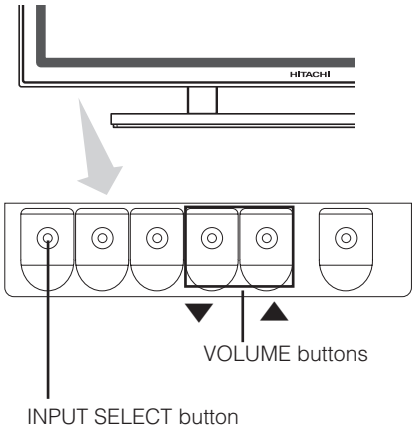
Indicating lamp

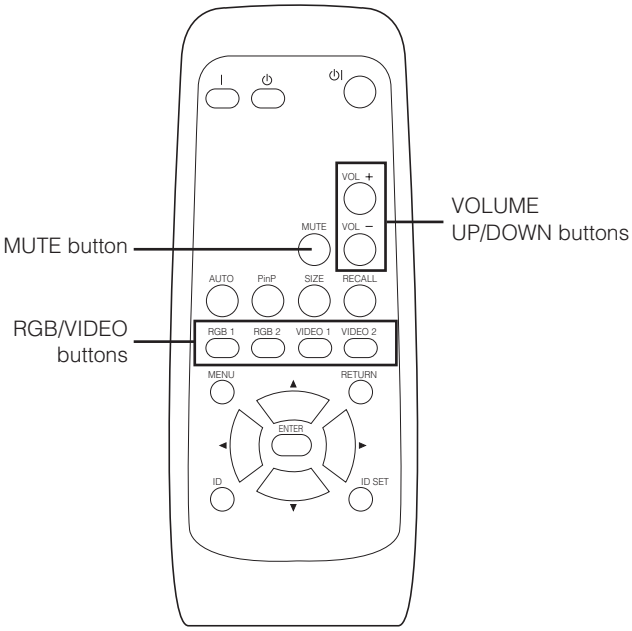
Indicating lamp	Power status	Operating
Off	Off	When the main power switch is set to OFF.
Lights red	Off (standby)	When the main power switch is ON, and the OFF button on the remote control or the SUB POWER button on the underside of the front of the frame is OFF.
Lights green	On	When the main power switch is ON, and the ON button on the remote control or the SUB POWER button on the underside of the front of the frame is ON.
Lights orange	Off (standby)	When the main power switch is ON, and the ON button on the remote control or the SUB POWER button on the underside of the front of the frame is ON. However, the state in POWER SAVE mode

When the indicating lamp lights in orange or the message “NO SYNC SIGNAL”, “POWER SAVE” or “OUT OF FREQUENCY” appears on the screen, there is something unusual about the status of reception. See “POWER SAVE MODE” or “Symptoms That Seemingly Appear to be Failures.” 25 27

TIPS

- Avoid repeatedly turning the monitor on and off at short time intervals. Failures might result from such operation.
- Turn off the main power switch before leaving the monitor out of use for an extended period of time.
- If a power failure occurs while the main unit is running, it would be powered on upon recovery from the failure. Turn off the unit main power switch before leaving the main unit.





Input Switching

- **Input can be switched by pressing the RGB1, RGB2, VIDEO 1 or VIDEO 2 buttons of the remote control.**
- **Composite (S) and RGB VIDEO can be switched over using VIDEO 1 button on the remote control unit.** 22

  Composite (S)◄► RGB VIDEO

- **Input can be switched in the sequence of RGB1 → RGB2 → VIDEO 1 → VIDEO 2 by pressing the INPUT SELECT button of the monitor.**

When INPUT SELECT is pressed:

RGB1	(D-sub input)
↓	
RGB2	(D-sub input)
↓	
VIDEO1	(composite or S input)
↓	
VIDEO2	(component input)

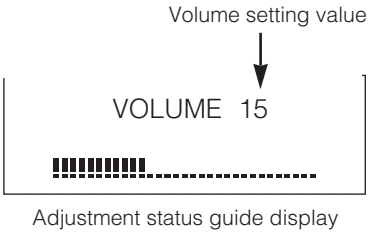
*(When RGB VIDEO Select)

RGB1	(D-sub input)
↓	
RGB2	(D-sub input)
↓	
VIDEO1	(RGB VIDEO)

- If the video unit is not installed, you cannot switch to VIDEO1 and VIDEO2.
- When the same signal is input to RGB1 and RGB2, the phases may be slightly misaligned. This is not a malfunction. In such case, please change one refresh rate (Vertical frequency 31) of the apparatus to be used.

Volume Adjustment

The volume can be adjusted by pressing the VOL+ and VOL- buttons of the remote control (or the ▲ and ▼ volume buttons of the monitor unit) while the on-screen display system is not being displayed.

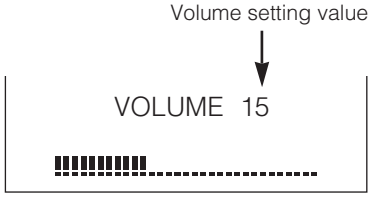


Adjustment status guide display

- **When a button is pressed, the volume adjustment status guide will be displayed.**
  - The volume will increase when the VOL+ (or ▲) button is pressed while the guide is being displayed.
  - The volume will decrease when the VOL- (or ▼) button is pressed while the guide is being displayed.
- **The volume can also be adjusted with the on-screen display system.** 19

Audio Mute

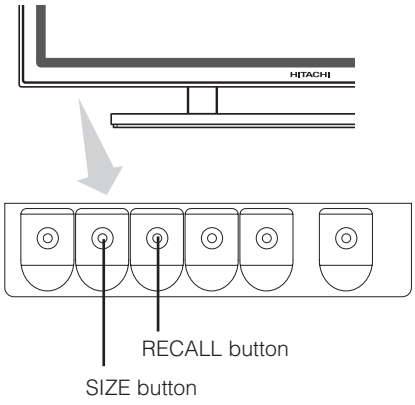
The audio volume can be temporarily lowered to the mute volume level by pressing the MUTE button of the remote control.

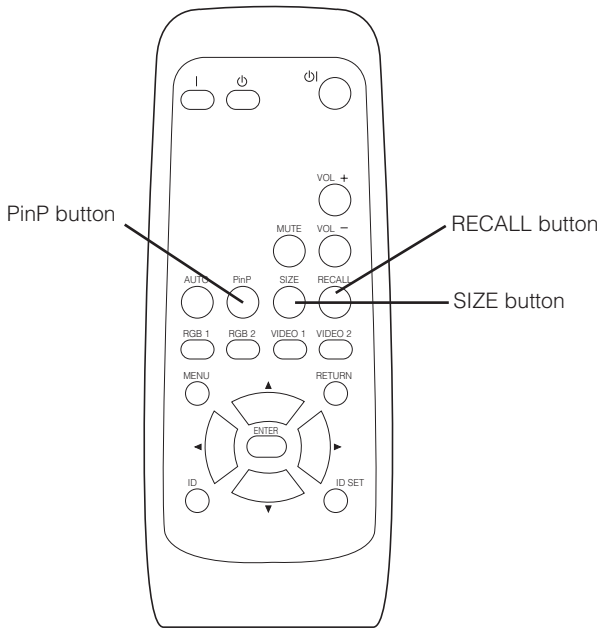


Adjustment status guide display
(The display color will change to pink.)

- **When a button is pressed, the word MUTE (in pink) and the volume adjustment status guide will be displayed.**
  - The volume setting can be lowered by pressing the VOL- button while the audio is muted.
  - The muting can be cancelled by pressing the VOL+ button while the audio is muted.
- **When audio is muted with the on-screen display system, the volume setting can be adjusted.** 19

When the MUTE button of the remote control is pressed again, muting will be canceled, the volume display (blue) will appear and sound will be output.





Size Switching

Each time the SIZE button of the remote control or the monitor is pressed, the screen display size (or display area) will change in sequence and the status will be displayed at the bottom of the screen.

- **During RGB signal input**

NORMAL → FULL → ZOOM1
REAL* ← ZOOM3 ← ZOOM2

- Some types of signals may not be able to switch as desired.

* VGA and W-VGA only

- **During VIDEO signal input**

(when the optional video unit is attached)

4:3 → PANORAMA → MOVIE1
FULL ← MOVIE2

- Depending on the type of signal, in some cases it may not be possible to switch the size, or switching to some sizes may not be possible.

«FULL»

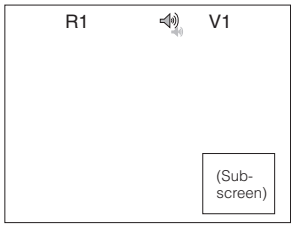
Displaying Two Screens

If the PinP button on the remote control is pressed when the optional video unit is installed, two screens will display.

Activating the P-in-P mode from the RGB input screen

Pressing the PinP button one time will display two screens.

- The speaker icon can be shifted left and right by pressing the ◀ and ▶ SELECT buttons; the audio of the video will be output from the side on which the speaker icon is located.
- The sub-screen can be selected with the VIDEO1 and VIDEO2 buttons from the status shown in the diagram to the right.
- Pressing the PinP button again will cancel the two screen display.



V1: Displays the VIDEO input signal of the sub-screen.

Activating the P-in-P mode from the video input screen

Pressing the PinP button one time will display two screens.

- The speaker icon can be shifted left and right by pressing the ◀ and ▶ SELECT buttons; the audio of the video will be output from the side on which the speaker icon is located.
- Pressing the PinP button again will increase the size of the screen.
- Pressing the PinP button once again will cancel the two screen display.

V1	V2

- When VIDEO1 set it to RGB Video, it is not completed in P in P mode.

Refer to two screen table 25

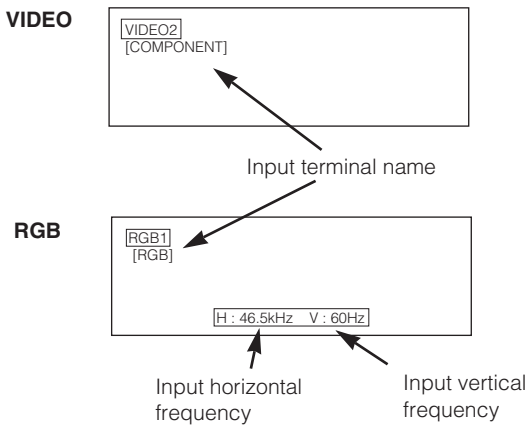
TIPS

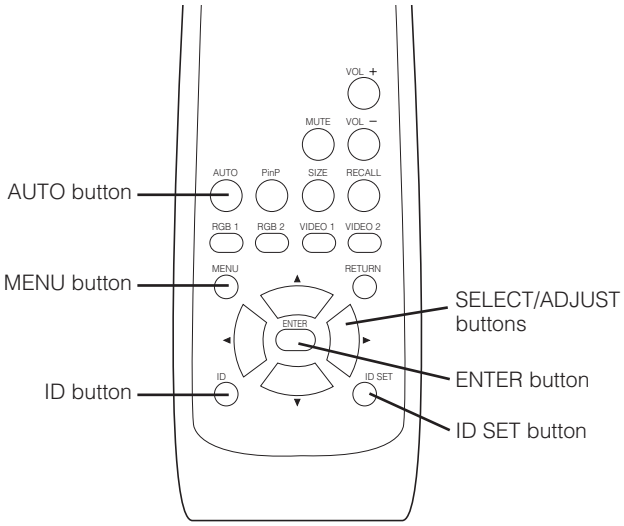
- Even if the input of the horizontal / vertical synchronizing signal (or video signal) stops in the two screen display, the mode will not change to power save mode.
- Please be careful since image retention will occur if display is left in a two screen display state for a long period of time.

Input Signal Screen Display

The input signal status can be displayed on the screen by pressing the RECALL button of the remote control.

- The display will go out in approximately 3 seconds.





Automatic Adjustment of Screen Position and the Clock

Adjustment of the screen to a position suitable for the video and the clock adjustment can be performed automatically by pressing the AUTO button of the remote control.

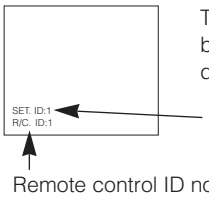
⚠CAUTIONS

Perform this adjustment for each input (RGB1 or RGB2) and for each signal.

* Depending on the signal, satisfactory adjustment may not be possible in some cases. In such case, adjust by referring to the Display Menu item.

Independent Operation of Multiple Monitors (ID No)

Setting the ID No. of the remote control allows separate control of up to a maximum of seven monitors. Remote control ID No. 2 (initially ID no. 1) can be set by pressing the ID SET button for 2 sec. or more while holding down the ID button. The number will be incremented (2···6→7→1→2) when this button pressed continuously.



The remote control ID no. can be checked by pressing the ID SET button while holding down the ID button.

Monitor ID no.

Remote control ID no.

The ID remote control is operated by pressing the various buttons while holding down the ID button; Operation is possible only when the remote control and monitor ID nos. are the same.

- The remote control can be operated normally by pressing the various remote control buttons without holding down the ID button.
- Set the monitor using the ID No. of OTHER MENU. 23

Using the Menu Screen (On-screen display system)

When the MENU button is pressed, the adjustment menu screen will be displayed; from there, video adjustment and setting is possible by using the SELECT button, ADJUST button and ENTER button.

- Refer to 18 - 23 concerning the adjustment items and the settings.

Example: Selecting the Picture screen

1. Press the MENU button to display the Main Menu screen.

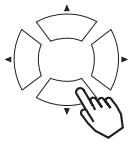
《MAIN MENU》
PICTURE
SOUND
DISPLAY
FUNCTION
OTHER

SEL. ENT ENT. RTN END

2. Press the ENTER button to display the Picture Menu screen. (Use the ▲ and ▼ SELECT buttons to select other items.)

《PICTURE MENU》 1/2
OPERATE MODE : NORMAL
CONTRAST : 127
BRIGHTNESS : 0
COLOR : 0
TINT : 0
ENHANCER : LOW
FILTER : OFF
RESET
SEL. ENT ENT. RTN BACK

3. Use the ▲ and ▼ SELECT buttons to select the item to be adjusted and then use the ◄ and ► ADJUST buttons to adjust (example: COLOR).



COLOR 0

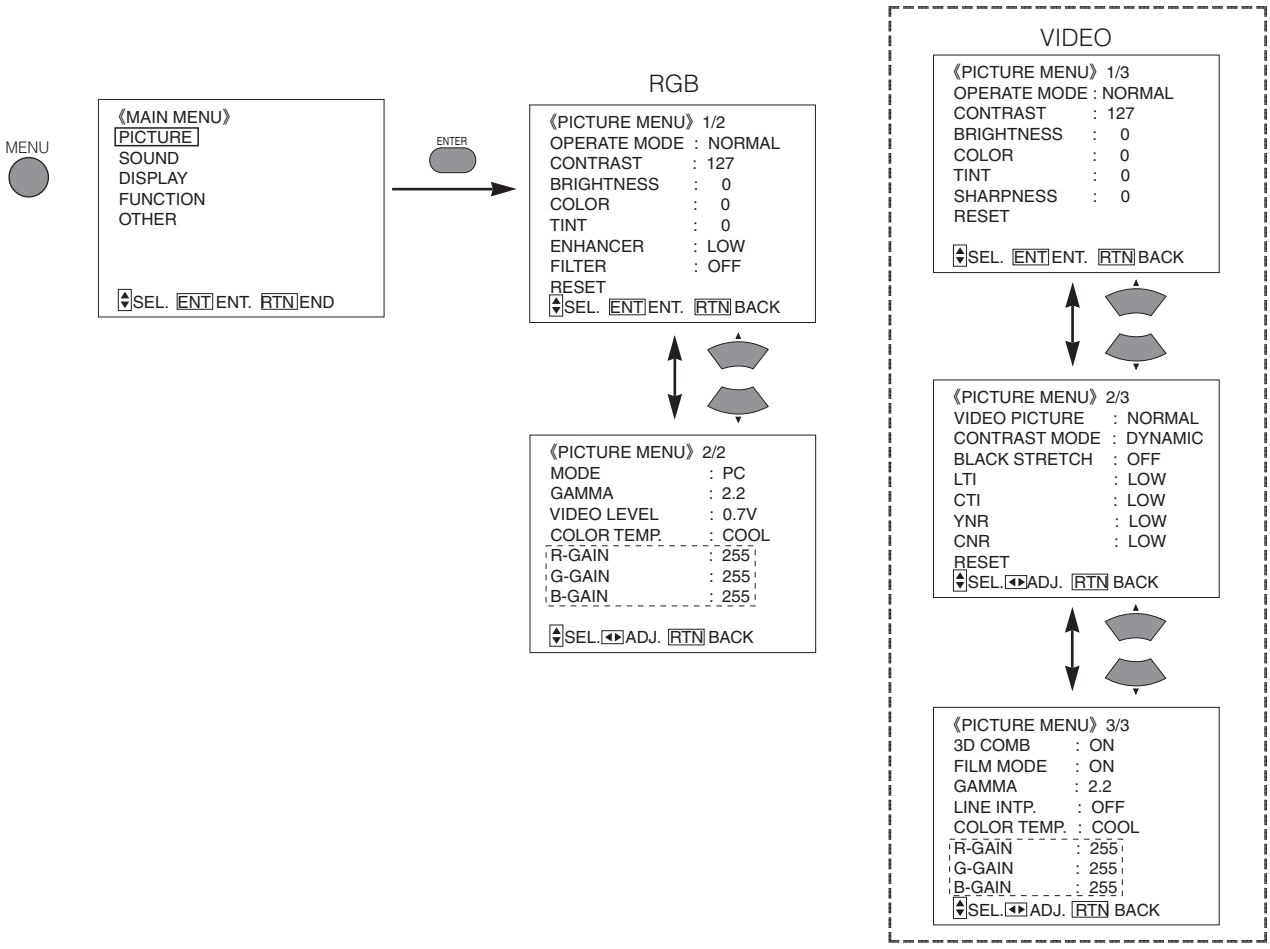
ADJ RTN BACK

- Press the RETURN button to return to the previous screen.
- If there is no operation for a period of one minute, the Adjustment Menu screen will be closed automatically.

OPERATING INSTRUCTIONS (continued)

PICTURE MENU

(This function can only be used when the optional video unit has been inserted.)



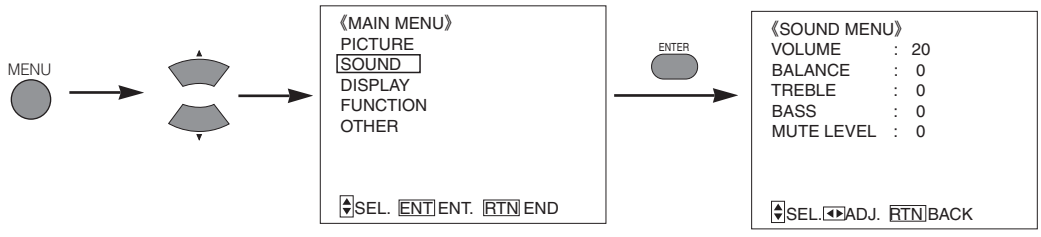
Selected characters	◀	▶	Setup hint
OPERATE MODE	NORMAL ⟷ LIFE EXTEN.1 ⟷ LIFE EXTEN.2		By controlling the brightness of a screen, power consumption can be reduced or degradation of a panel can be mitigated. The order of effectiveness in reducing power consumption and reducing panel degradation is LIFE EXTEN.2 > LIFE EXTEN.1 > NORMAL.
CONTRAST	Narrows the gap between brightness and darkness.	Broadens the gap between brightness and darkness.	Adjust for maximum visibility to suit the ambient brightness. Cannot be used when LIFE EXTEN1, 2 are selected.
BRIGHTNESS	Black is subdued for increasedoverall darkness.	Black is set off for increased overall brightness.	Adjust to prevent black from spreading across the screen.
COLOR	Lightens colors.	Darkens colors.	Adjust for desired density, somewhat for lighter colors for a natural look.
TINT	Enhances red and weakens green.	Enhances green and weakens red.	Adjust for a nice looking skin color.
ENHANCER	OFF ⟷ LOW ⟷ MID ⟷ HIGH		Sets the clarity of small details to the desired level.
FILTER	OFF	ON	Only displayed for RGB signals. Turn ON when concerned about screen flicker.
RESET			The original factory settings can be restored by pressing the ENTER button.
MODE	PC	MOVIE	Set to MOVIE when viewing moving images on a personal computer.
GAMMA	2.2	2.8	Normally set to 2.2.
VIDEO LEVEL	0.7	1.0	Normally set to 0.7 V. If white is found to spread across the screen, set to 1.0 V.
COLOR TEMP.	COOL ⟷ NORM ⟷ WARM ⟷ USER		Normally set to COOL.
R-GAIN	Red is weakened.	Red is strengthened.	Sets the color adjustment selected by the user with COLOR TEMP.. USER mode takes effect automatically when an attempt is made to set a gain.
G-GAIN	Green is weakened.	Green is strengthened.	
B-GAIN	Blue is weakened.	Blue is strengthened.	

PICTURE MENU (continued)

Selected characters	◀	▶	Setup hint
SHARPNESS	Picture is soft	Picture is sharp	In general, position is in the center and shift to the minus (-) side when a softer effect is desired.
VIDEO PICTURE	NORMAL	SOFT	Use SOFT when DVD, video and other images become harsh or picture noises on the screen is evident. Use NORMAL as standard.
CONTRAST MODE	DYNAMIC ↔ LINEAR ↔ AUTO		DYNAMIC:Emphasizes the differences between video shadings to improve the feeling of contrast. LINEAR : The gradation of an image is reproduced as faithfully as possible. AUTO:Detects image brightness and automatically adjusts for natural brightness.
BLACK STRETCH	OFF ↔ LOW ↔ MID ↔ HIGH		Adjusts the black level compensation.
LTI			Adjusts the sharpness of the brightness signal.
CTI			Adjusts the sharpness of the color signal.
YNR	LOW ↔ HIGH ↔ OFF		Performs brightness signal noise reduction. Turn up to reduce noise.
CNR			Performs color signal noise reduction. Turn up to reduce noise.
3D COMB	ON	OFF	Set to OFF when video and other images appear unnatural. Set to ON for normal use. Only an NTSC composite signal input is effective. It cannot choose at the time of a component signal (VIDEO 2).
FILM MODE	OFF	ON	ON:Automatically detects the movie film material and faithfully reproduces the original film image. Set to ON normally. OFF:Set to OFF when switching between images does not appear natural.
LINE INTP.	OFF	ON	Set to ON when using 3-D video disks. Set to OFF normally.

: This function can only be used when the optional video unit has been inserted.

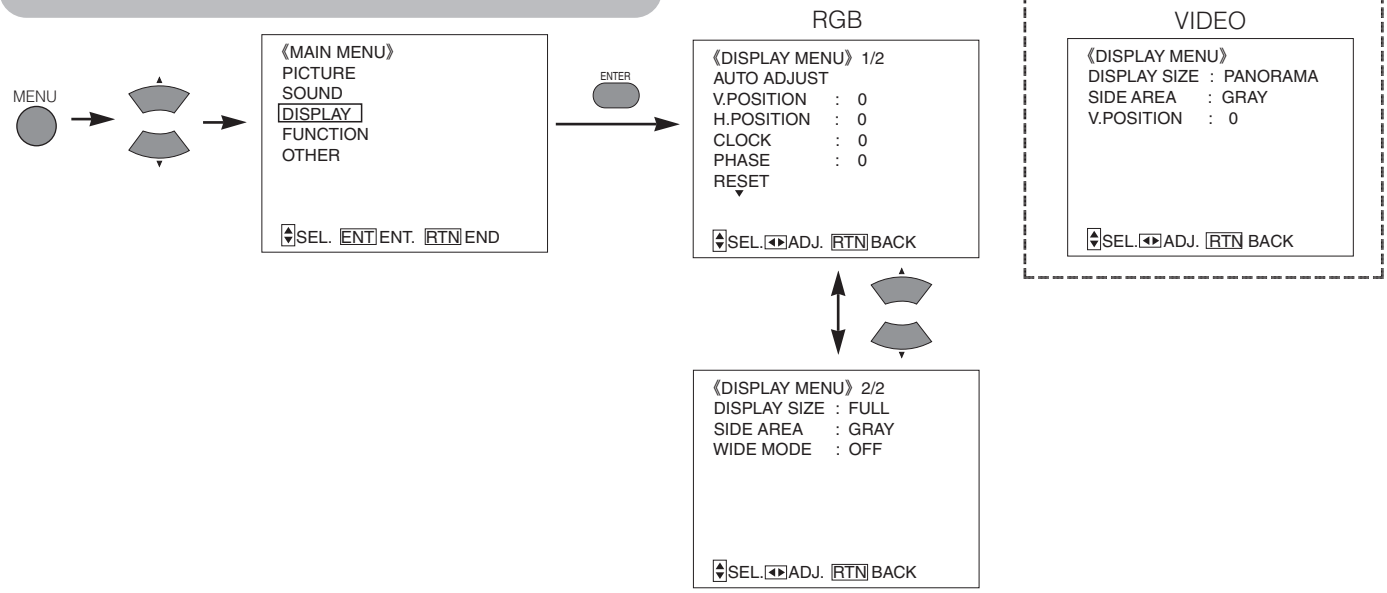
SOUND MENU



Selected characters	◀	▶	Setup hint
VOLUME	Turns down the volume.	Turns up the volume.	Adjust for the desired sound volume.
BALANCE	Suppresses right-side sound.	Suppresses left-side sound.	Adjust to taste.
TREBLE	Suppresses treble.	Enhances treble.	Adjust to taste.
BASS	Suppresses bass.	Enhances bass.	Adjust to taste.
MUTE LEVEL	Turns down the sound volume.Minimum 0.	Turns up the sound volume.Maximum pre-mute sound volume.	Varies the sound volume when the MUTE button is pressed.

OPERATING INSTRUCTIONS (continued)

DISPLAY MENU



Selected characters	◀	▶	Setup hint
AUTO ADJUST*	Automatic regulation is started with the ENTER button.		V. POSITION, H.POSITION, CLOCK, and PHASE are adjusted automatically. It is displayed as "ADJUSTMENT" during automatic regulation.
V.POSITION	Moves down the vertical position.	Moves up the vertical position.	Adjust the vertical display position.
H.POSITION	Moves the horizontal position to left.	Moves the horizontal position to right.	Adjust the left-side display position.
CLOCK	Reduces the dot clock frequency (shrinks the right side).	Increases the dot clock frequency (expands the right side).	Adjust for maximum character clarity.
PHASE	Slows the dot clock phase (shifts slightly to left).	Advances the dot clock phase (shifts slightly to right).	Adjust for clear character visibility.
RESET			The original factory settings can be restored by pressing the ENTER button.
DISPLAY SIZE	RGB FULL ⟷ ZOOM1 ⟷ ZOOM2 NORM ⟷ REAL* ⟷ ZOOM3		FULL displays images on the full screen. Convenient for grasping entire images. * VGA and W-VGA only
	VIDEO FULL ⟷ 4:3 ⟷ PANORAMA MOVIE2 ⟷ MOVIE1		Select in accordance with the image software aspect ratio (horizontal to vertical ratio).
SIDE AREA	GRAY	BLACK	Sets the color of parts outside the display screen when 4:3 is used.
WIDE MODE**	OFF	ON	WIDE VGA display only.
V.POSITION	Moves down the vertical position.	Moves up the vertical position.	Adjust the vertical position when captions are missing in PANORAMA / MOVIE1 / MOVIE2.

* Depending on the type of signal displayed, displays may not be optimized through automatic adjustment. Apply MANUAL ADJUST to optimize them.

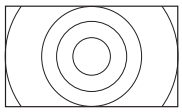
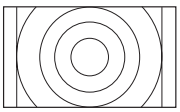
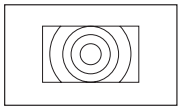
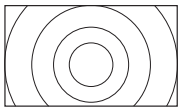
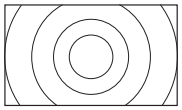
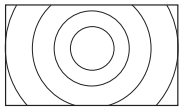
* 1080/60i signal doesn't exit the display of AUTO ADJUST. Apply MANUAL ADJUST in this case.

** When WIDE MODE is set to ON, the display area mode becomes FULL and switching of the size is not possible.

: This function can only be used when the optional video unit has been inserted.

DISPLAY MENU (continued)

Display area selection diagram (RGB input)

Resolution	Full display	Circular display				
Display	FULL	NORMAL	REAL	ZOOM1	ZOOM2	ZOOM3
640 X 480 (VGA)						
800 X 600 (SVGA)						
1024 X 768 (XGA)						
1280 X 1024 (SXGA)						
1600 X 1200 (UXGA)			* VGA and W-VGA only			

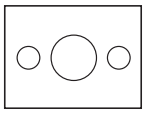
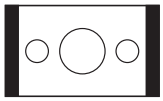
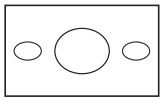
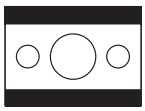
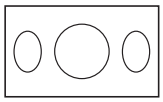
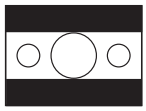
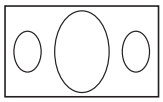
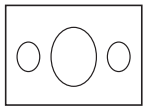
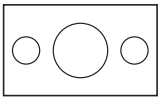
Processes such as compression (thinning) and expansion are performed for the above signal display. Because of this, there is a possibility that flicker may become noticeable on ZOOM (1 ~ 3) depending on the display contents. If this occurs, turning the FILTER ON 18 can reduce the flicker.

TIPS

- Composite / S signal (video1 input) and component (576i, 480i, 480p) signal applicable for all size modes.
- For component (HD3: 1035i, 1080i, 720p) signals, the display mode is not selectable.

Display size selection diagram

(This function can only be used when the optional video unit has been inserted.)

When you want to	Set the display size to	Input signal	Display screen	Remarks
Play a 4:3 image in a 16:9 screen faithfully.	4 : 3	 (4:3 signal)		Blanking occurs on both sides.
Play a 4:3 image in a 16:9 screen with the height and width of the middle of the screen enlarged on equal scales and with both sides appearing somewhat enlarged.	PANORAMA (Panoramic)			
The 16:9 VISTA size image in the 4:3 image is faithfully reproduced on the 16:9 screen.	MOVIE1	 (Vista)		• The 4:3 image is called a letterbox image. • In some cases, some slight blanking may remain at the top and bottom.
The 21:9 Cinema size image in the 4:3 image is expanded vertically on the 16:9 screen.	MOVIE2	 (Cinema)		In some cases, some slight blanking may remain at the top and bottom.
Play a 4:3 image faithfully in a 16:9 screen in the standard vertical size and horizontally squeezed.*	FULL	 (Squeez)		* An image with an aspect ratio of 16:9 shrunk horizontally to 4:3 to display in a 4:3 screen

DISPLAY MENU (continued)

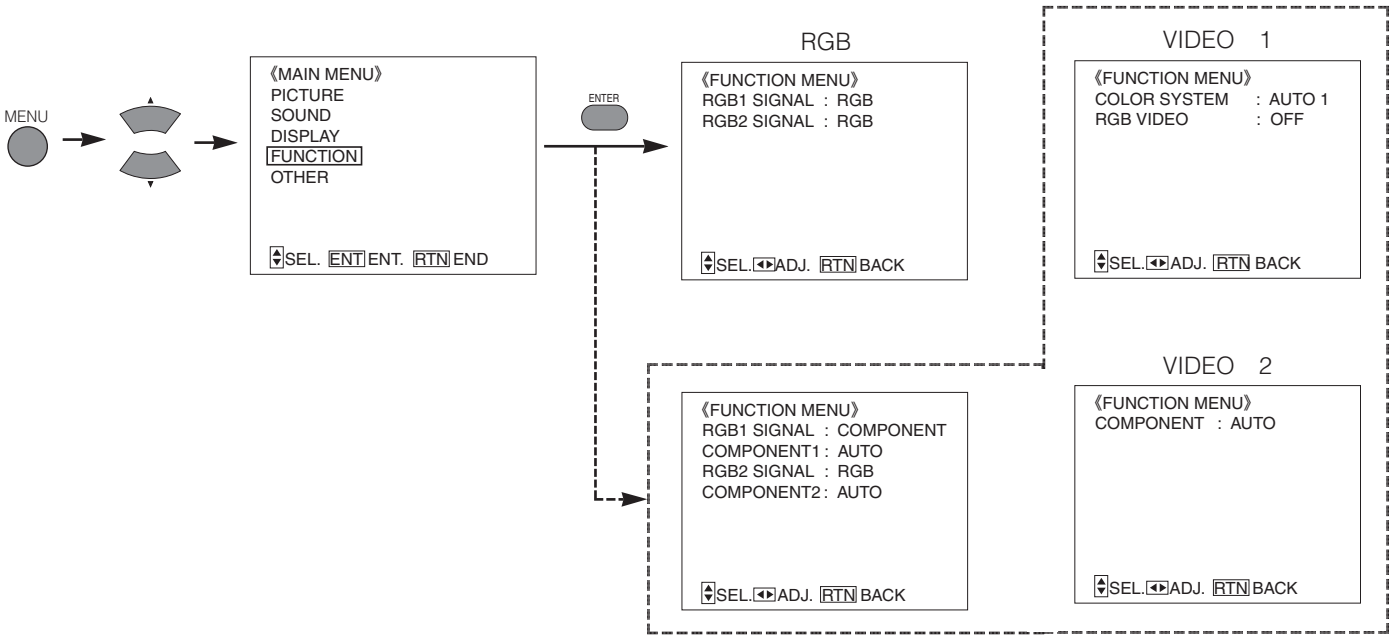
TIPS

Using a wide-screen monitor

- This monitor has a screen mode selection feature. If an incompatible screen mode is selected to play certain software, such as a TV program, the image would appear different from the original. Take this into consideration when making screen mode choices.
- Use of this monitor in its enlarged display mode with the wide feature enabled in coffee shops, hotels and other establishments for commercial or pubic viewing purposes could infringe on the copyright holder's right protected by Copyright Law.
- When a normal 4:3 image is displayed over the entire screen in the PANORAMA mode, not the Wide mode, parts of the periphery of the image may disappear and/or appear distorted in some cases. Use the 4:3 mode to view images, which were created in 4:3 mode. This mode allows 4:3 content to be viewed without picture distortion.

FUNCTION MENU

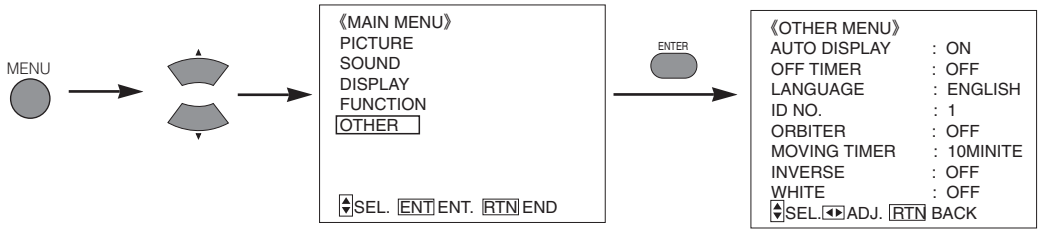
(This function can only be used when the optional video unit has been inserted.)



Selected characters	◀	▶	Setup hint
RGB1 SIGNAL (RGB2 SIGNAL)	RGB	COMPONENT	Sets to the signal output of the device to be connected to RGB I and RGB 2 jacks.
COMPONENT (COMPONENT1, 2)	AUTO ⟷ YCBCR ⟷ YPBPR ⟷ MUSE		Setup matching the color matrix format of the signal to be input.
COLOR SYSTEM	AUTO1 ⟷ NTSC ⟷ PAL ⟷ SECAM N-PAL ⟷ M-PAL ⟷ 4-NTSC		Switch the color system to suit the input system in video input mode VIDEO1. • Normally, set to AUTO1. The input signal system will be automatically recognized to display input images on the screen (NTSC, PAL, NTSC4.43). • If the input signal contains much noise or has a low level at AUTO1 and the operation is found erratic, set to match the input system.
RGB VIDEO	OFF	ON	Compatible with European standard SCART signals. Inputs composite signals of video equipment to composite terminal and RGB signals of video equipment to connect R output to PR (CR) terminal, G output to Y terminal and B output to PB (CB) terminal. Normally set to OFF. * Cannot switch to VIDEO2 when ON is selected.

: This function can only be used when the optional video unit has been inserted.

OTHER MENU



Selected characters	◀	▶	Setup hint
AUTO DISPLAY	Set to ON. Information is displayed when switching inputs and changing signals.	Set to OFF. Information is not displayed when switching inputs and changing signals.	Set to OFF when the display is not needed when switching signals.
OFF TIMER	OFF ⟷ 30MIN ⟷ 60MIN 120MIN ⟷ 90MIN		This function automatically sets the power to standby status when the indicated time period has elapsed.
LANGUAGE	ENGLISH ⟷ DEUTSCH ⟷ ITALIANO 日本語 ⟷ ESPANOL ⟷ FRANCAIS		ENGLISH is the factory setting.
ID NO.	1 ⟷ 2 ⟷ 3 ⟷ 4 7 ⟷ 6 ⟷ 5		Assigns ID nos. to the monitors so that they can be controlled individually (up to 7 monitors can be controlled).
ORBITER	OFF	ON	Automatically moves the images to prevent image retention. The moving interval is set with the MOVING TIMER (1 - 60 min.).
MOVING TIMER	Shortens the time interval.	Extends the time interval.	
INVERSE	OFF ⟷ ON ⟷ 60MIN		Normally, set to the OFF mode. When 60 min. is set, the power will be set to standby status after 60 minutes have elapsed and the setting will be canceled. When a still image is displayed for an extended time, ON is then set and the same still image is again displayed, panel image retention is prevented with [INVERSE] ON or [WHITE] ON. Does not operate when there is no input signal.
WHITE			

OTHER FEATURES

Automatic Store

Approximately 1 sec. after adjustment is completed, the adjustments will be recorded as shown in the table below.

Menu	Display	Registration condition
PICTURE	OPERATE MODE VIDEO LEVEL 3D COMB	Can register 1 group.
SOUND	VOLUME BALANCE TREBLE BASS MUTE LEVEL	
DISPLAY FUNCTION	SIDE AREA RGB1 SIGNAL RGB2 SIGNAL COMPONENT1 COMPONENT2 COMPONENT (VIDEO2)	
OTHER	COLOR SYSTEM AUTO DISPLAY LANGUAGE ID NO. ORBITER MOVING TIMER INVERSE WHITE	
PICTURE	CONTRAST BRIGHTNESS COLOR TINT GAMMA COLOR TEMP. CONTRAST MODE FILM MODE	Can register for every input function.
DISPLAY	DISPLAY SIZE	

Menu	Display	Registration condition
PICTURE	SHARPNESS VIDEO PICTURE BLACK STRETCH LTI CTI YNR CNR	Can register for every input function in a video signal input.
DISPLAY	V.POSITION H.POSITION CLOCK PHASE	Can register 1 group every signal mode.
PICTURE	ENHANCER FILTER MODE	Can register settings every RGB1, RGB2 input (RGB mode).
DISPLAY FUNCTION	WIDE MODE RGB1 SIGNAL RGB2 SIGNAL COMPONENT1 COMPONENT2	
PICTURE	R-GAIN G-GAIN B-GAIN	Can register settings every RGB functions and video functions.

: When the optional video unit has been inserted.

- The previously recorded items will be lost.
- The signal mode can be identified by the horizontal/vertical sync frequency and the sync signal polarity. Different signals with which all the elements are the same or similar will be handled as the same signal.

Signal Check

Changes in the signal status are displayed on the screen as they arise.

Status	Display	Action
When AUTO DISPLAY is set to ON, the input signal is switched or when the RECALL button is pressed.	A guide is displayed for the input terminal and the horizontal and vertical sync frequency.	———
When the sync signal is no longer detected.	• A guide displays NO SYNC SIGNAL, and POWER SAVE (for approx. 5 sec.) • When the condition continues where the sync signal cannot be detected, indicator lamp of power source changes in orange and the mode switches to power save mode.	Recheck the personal computer power switch status and the connection status.
When the input signal does not match the monitor specifications or is in an unstable status.	A guide displays OUT OF FREQUENCY.	Recheck the input signal specifications. 31 ~ 32

RGB

RGB1
[RGB]

H : 46.5kHz V : 60Hz

VIDEO

(This function can only be used when the optional video unit has been inserted.)

VIDEO2
[COMPONENT]

POWER SAVE

OUT OF FREQUENCY

OTHERFEATURES (continued)

Power Save Mode

When the RGB input is selected

• When this unit is connected to a VESA DPMS computer, the Power Save (Off) mode can be set to be activated automatically when the computer is not being used to reduce power consumption by this unit.

RGB sync signal	Horizontal	Yes	No	Yes	No
	Vertical	Yes	Yes	No	No
Video signal		Active (normal display)	Blank (no video)		
Operation mode		On	Off		
Indicating lamp		Lights green	Lights orange		
Power consumption		370W	1W or less (100-120V) 2W or less (200-240V)		

When the Video Input is selected

(This function can only be used when the optional video unit has been inserted.)

• When there is no video signal input, the power-saving system operates to reduce the power consumed by the sunit.

Video signal	Yes	No
Screen display	Active (normal display)	Blank (no video)
Operation mode	On	Off
Indicating lamp	Lights green	Lights orange
Power consumption	370W	1W or less (100-120V) 2W or less (200-240V)

Returning to operating status

• Operate the personal computer, or press either the INPUT SELECT button of the main unit or the RGB//VIDEO button of the remote control.

* During two-screen displayed, the power save mode will not be activated even if the horizontal/vertical sync signal (or video signal) is no longer input.

TWO SCREEN TABLE

Right screen (Sub-screen) / Left screen	RGB1 PC input	RGB2 PC input	RGB1 Component	RGB2 Component	VIDEO1 (RGB VIDEO)	VIDEO2	Notes
RGB1 PC input		×		×	○	○	PC window
RGB2 PC input	×		×		○	○	PC window
RGB1 Component		×		×	○	○	Two screens
RGB2 Component	×		×		○	○	Two screens
VIDEO1 (RGB VIDEO)	×	×	×	×		○ (×)	Two screens
VIDEO2	×	×	×	×	○		Two screens

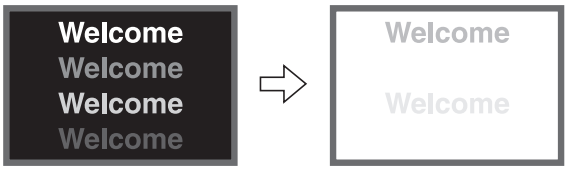
IMAGE RETENTION OF PLASMA DISPLAY

There are different characteristics that result in panel image retention depending on how the plasma display is used. Situations and effective usage methods related to ghosting are provided below.

Image retention characteristics of a plasma display

The image retention phenomenon of a plasma panel occurs due to partial phosphor degradation arising from partial character and figure display.

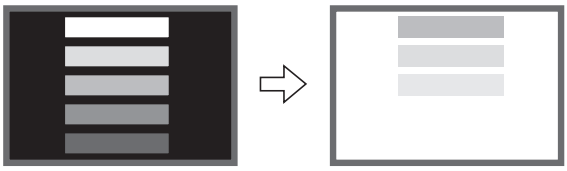
For example, when the character image as shown in Fig. A at the right is continuously displayed for a long period of time, the only part of the phosphor (Red,Green, Blue) that will degrade will be the color of the applicable character display portion. Consequently, when a white image is displayed on the entire screen as shown in Fig. a, the character marks displayed up to that time will become a color difference visible to the eye, but the phosphor will never burn.



【Fig. A】 【Fig. a】

■The degree of image retention is proportional to the brightness of the characters and figures displayed as well as the display time.

- The tendency of the phosphor is to degrade more the brighter the characters and figures are displayed. When images of figures with different levels of brightness, as shown in Fig. B, are continuously displayed for a long period of time, it becomes easier for image marks at locations when the brighter figures are displayed to be noticeable.



【Fig. B】 【Fig. b】

* The image retention images in this document are exaggerated for the purpose of explanation. The actual manner in which the image retention is seen differs depending on the operation time and brightness.

Methods to Reduce the Occurrence of Image Retention

- Lower the CONTRAST and BRIGHTNESS settings of the plasma display as much as possible.
  A function is provided in the display that controls the brightness of the screen to reduce degradation of the panel. Using this function makes it possible to reduce image retention.
  (Refer to OPERATE MODE (LIFE EXTEN. 1 OR LIFE EXTEN. 2 shown on 18)

- Set the plasma monitor to an “INVERSE” or “WHITE” display.
  The occurrence of image retention when displaying images of identical patterns, such as static images, for long periods of time can be reduced by displaying a reversed color or completely white screen for about 1 ~ 2 hours after terminating the display.
  (Settings can be made using INVERSE AND WHITE of OTHER MENU shown on 23)

- Using in combination with moving images
  Since the degradation of the fluorescent material progresses comparatively uniform for moving images, the occurrence of partial image retention can be controlled. We recommend to use in combination with moving images such as a DVD.
  * Please be careful since image retention will occur if display is left in a two screen display state for a long period of time.
  * Television broadcasts include images displayed for long periods of time in which the left and right or top and bottom of the image are cut and broadcast station name or time are displayed for a long period of time at the same portion of the screen. Image retention in these portions can be expected to occur, so please be aware.

NOTES

About screen defects

- High precision technology is used in the making of plasma panels but there may be dark spots (points that do not illuminate) and bright spots (points that are too bright) in some cases. These do not indicate a malfunction.

About residual images

- In some cases, residual images may remain after the short-term display of still images and another image is displayed, but these will disappear and return to normalcy. This is not a malfunction.

About the panel screen

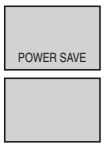
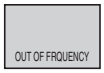
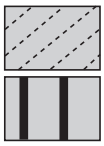
- Plasma displays display images by means of electrical discharges inside the panel. Because of this, the temperature of the panel surface may rise in some cases.Also, plasma displays are made of finely processed glass. A reinforced glass filter is installed over the panel surface but avoid strong impact because there is still danger of glass breakage.

TROUBLESHOOTING

Symptoms That Seemingly Appear to be Failures

Make the checks suggested below depending on the symptoms observed. If the symptoms remain uncorrected, contact your dealer.

> ⚠ WARNING
> Customer servicing can be hazardous.

Symptom	Point to check	See page
• No picture with the power-indicating lamp off.	• Check the way the power cable is connected. • Press the power switch.	13 14
• The message “NO SYNC SIGNAL” or “POWER SAVE” is displayed. • No picture with the power indicating lamp lights in orange. 	No sync signal is detected. • Check the way the signal cable is connected. • Make sure that the switch of the computer, imaging equipment , etc., is turned on. • Make sure the computer is not in the power-save mode. • Check to see if the input selection matches the connection terminal.	11 12
• The message “OUT OF FREQUENCY” is displayed. 	An input signal is not received normally. • Check to see if the input signal matches the monitor specifications. • Check the way the signal cable is connected.	11 12 31 32
• The power indicating lamp is normally lit but no picture .	• Check the contrast and brightness settings (adjust them for higher contrast and brightness). • Check the way the signal cable is connected.	11 12 18
• The display image appears flowing slantwise. • Text displayed across the screen appears vertically streaked, with the characters in vertical columns blurred. 	• Adjust the dot clock frequency and phase. (Adjust the dot clock frequency first, the dot clock phase next.) (RGB input)	29
• Text displayed across the screen appears blurred. • A fine pattern flickers when displayed on the screen.	• Adjust the dot clock phase for the clearest viewing. (RGB input)	29
• The remote controller does not work.	• Check to see if the batteries are loaded in the remote controller in opposite direction. • Check to see if the batteries in the remote controller are OK.	9
• The screen becomes dark and the images cannot be seen during VTR special playback (fast forward, rewind).	• This sometimes occurs when a component output VTR such as the 480i is connected. This is not a malfunction; therefore, please take note that this may occur. When it does occur, change to composite output, or S1 (or S2) output.	-
• The display image does not come out by the SCART signal.	• Check the way the signal cable is connected. • Check the setup. • The S video terminal has priority and when used in composite, the picture can become dark, as there is no synchronizing signal. In this case, remove the S terminal cable.	12 15 22

TROUBLESHOOTING (continued)

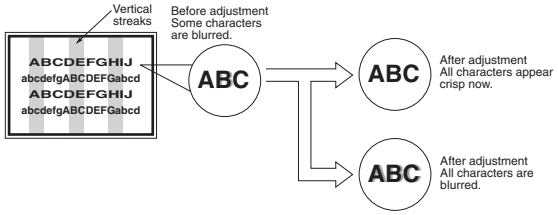
Symptoms That Seemingly Appear to be Failures (continued)

Symptom	Point to check	See page
• The temperature of the display panel surface is high.	• The plasma display panel is lighting the phosphors by the discharge of internal radiation. In some cases, this may cause the temperature of the panel surface to increase. Please note that this is not a malfunction.	-
• There are locations on the screen that are different from the periphery (*). *Points that do not light, points with brightness different from that of the periphery, points with color different from that of the periphery, etc.	• High-precision technology is used to manufacture the plasma display panel, However in some cases, there are minor defects in some parts of the screen. Please note that this is not a malfunction.	-
• Vertical stripes appear, depending on the screen contents.	• The plasma display panel is lighting the phosphors by the discharge of internal radiation. Depending on the screen contents, in rare cases this may cause vertical stripes to appear because of failure to light. Please note that this is not a malfunction.	-
• Coarse horizontal stripes appear in FULL display.	• Adjusting the phase will reduce the horizontal stripes. (RGB input)	
• The display dims to make the picture invisible during special playback of a VCR (FF, REW).	• This condition may occur when the unit is connected to a VCR with component output, such as 480i, but it is not a failure. But when it occurs, switch to composite output or S1 (S2) output).	-
• Flickering in the form of horizontal lines oscillating up and down. (PC INPUT MODE only)	• If the direct frequency from the computer is below 85Hz, try a higher frequency (upper limit 85Hz). There may be a slight attenuation of the current image. • Try turning the FILTER ON. For this case however, the vertical resolution will drop.	18
• The fan motor is noisy.	• Use the fan that controls the temperature in the main body to lower the temperature of this unit. If the ambient air temperature increases, the fan will start, the RPMs will increase and motor noise will grow louder. This is not a malfunction though.	-
• The top of the monitor heats up.	• When used for long periods of time, the top of the monitor may heat up. This is not a malfunction.	-
• Text characters are displayed with varying thicknesses.	• The thicknesses of characters and lines may vary if images with a vertical resolution greater than 512 lines are displayed; however, this is not a malfunction.	

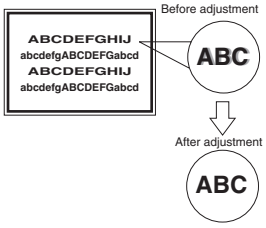
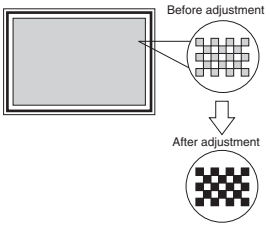
TROUBLESHOOTING (continued)

Actions to Correct Abnormal Displays

Depending on the kind of system equipment used, images may not be displayed normally. In this case, make the adjustments suggested below.

Symptom 1	Text displayed across the screen appears vertically streaked, with some characters blurred (figure 1). The display image appears flowing (figure 2) (RGB input).
Example	Figure 1 
Adjustment procedure	1) Press the AUTO button on the remote control.
	When adjustment is not possible with AUTO ADJUST 2) Press the MENU button. The Main Menu will be displayed. 3) Press the ▼ key of the SELECT button and select DISPLAY. 4) Press the ENTER button. The Display Menu will be displayed. 5) Press the ▼ key and select CLOCK. (Display fine patterns as characters or a vertical striped pattern over the entire screen during clock adjustment.) 6) Press the ▶ or ◀ key and search for clear characters over the entire screen. 7) Perform adjustment for symptom 2 below, when the characters are blurred on the entire screen.

• The display image may be momentarily disturbed during clock adjustment but this is not a failure.

Symptom 2	Text displayed across the screen appears blurred in its entirety (figure 2). A fine pattern flickers when displayed on the screen (figure 3).	
Example	Figure 2  	Figure 3 
Adjustment procedure	1) Press the AUTO button on the remote control.	
	When adjustment is not possible with AUTO ADJUST 2) Press the MENU button. The Main Menu will be displayed. 3) Press the ▼ key of the SELECT button and select DISPLAY. 4) Press the ENTER button. The Display Menu will be displayed. 5) Press the ▼ key and select PHASE. (Display fine patterns as characters or a vertical striped pattern over the entire screen during PHASE adjustment.)	
	6) Press ▶ or ◀ to make the text appear clean across the screen.	6) Press ▶ or ◀ to make the text appear without flickering.

PRODUCT SPECIFICATIONS

Product specifications and designs are subject to change without notice.

Panel	**Display dimensions**	Approx. 42 inches (922 mm (H), vertical 522 mm (V), diagonal 1059 mm)	
	Resolution	1024 (H) x 1024 (V) pixels	
Input signals	**Input terminals**	RGB input	VIDEO input*
		RGB one-line two input terminals (D-sub 15-pin) RGB audio two-line two input terminals (3.5mm Stereo mini jack)	Video 1 video input terminal (RCA) Video 1 audio input terminals (left, right) (RCA) Video 1 S video input terminal (S) Video 2 video input terminals (Y) (Pb/Cb) (Pr/Cr) (RCA) Video 2 audio input terminals (left, right) (RCA)
	Video signals	0.7 V/1.0 Vp-p, analog RGB (Recommended Signal) 1080/50i, 1080/60i	VIDEO input 1 : NTSC, NTSC-4.43, M-PAL, PAL60, PAL, N-PAL, SECAM VIDEO input 2 : 480/60i, 480/60p, 720/60p, 1080/60i, 1035/60i, 576/50i, 576/50P, 1080/50i
	Sync signals	H/V separate, TTL level [2KΩ]	-
		H/V composite, TTL level [2KΩ]	-
		Sync on green, 0.3 Vp-p [75Ω]	-
Video output Signal		-	Through output (RCA) of VIDEO1 input.
Recommended Signal		31 modes 31	16 modes 32
Audio output terminal		10W + 10W (6Ω)	
Input power		AC100 - 120 / 200 - 240V(automatically selected) 3.7A / 2A Power consumption 370W	
External dimensions		1030 (W) x 636 (H)x 89 (D) (mm) (excluding the stand)	
Mass		31kg (excluding the stand), 35kg (When mounted on optional stand.)	
Ambient conditions	**Temperature**	Operating : 5˚C to 35˚C, Storage : 0˚C to 40˚C	
	Relative humidity	Operating : 20% to 80%, Storage : 20% to 90% (non-condensing)	

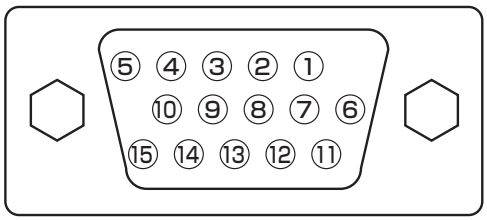
• The monitor takes at least 30 minutes to attain the status of optimal picture quality.
* This function can only be used when the optional video unit has been inserted.

Signal Input

RGB terminal (D-sub 15-pin connector)

Pin	Input signal
1	R. video (P_R/C_R)
2	G. video or sync on green (Y)
3	B. video (P_B/C_B)
4	No connection
5	No connection
6	R.GND (P_R/C_R, GND)
7	G.GND (Y, GND)
8	B.GND (P_B/C_B, GND)
9	No connection
10	GND
11	No connection
12	[SDA]
13	H. sync or H/V composite sync
14	V.sync. [V.CLK]
15	[SCL]

( ) : With RGB component input



• When different kinds of input signals are simultaneously input to the monitor via a graphics board or the like, the monitor will automatically select the signals in the following priority order:

Sync signal type	Priority
H/V separate sync.	1
H/V composite sync.	2
sync.on Green *	3

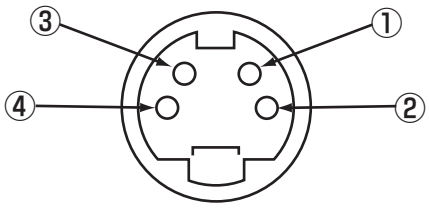
*Even in the case of the recommended signals shown on the following page, there may be instances when correct display is not possible. In this case, use H/V separate sync, H/V composite sync.

PRODUCT SPECIFICATIONS (continued)

Signal Input (continued)

S-input connector pin specifications

Pin	Input signal
1	Y
2	Y-GND
3	C
4	C-GND
Frame	GND



Recommended Signal List

The following are recommended for use with this moniter
RGB signal input (RGB1 or RGB2 signal input)

No.	Signal mode			Horizontal frequency (kHz)	Dot clock frequency (MHz)	Remarks
	Signal Name	Resolution	Vertical frequency (Hz)			
1	VGA	640 X 400	70.08	31.47	25.18	
2		640 X 480	59.94	31.47	25.18	
3	W-VGA	864 X 480	59.94	31.47	34.24	* WIDE MODE correspondence
4	VESA	640 X 480	72.81	37.86	31.50	
5		640 X 480	75.00	37.50	31.50	
6		640 X 480	85.01	43.27	36.00	
7		800 X 600	56.25	35.16	36.00	
8		800 X 600	60.32	37.88	40.00	
9		800 X 600	72.19	48.08	50.00	
10		800 X 600	75.00	46.88	49.50	
11		800 X 600	85.06	53.67	56.25	
12		1024 X 768	60.00	48.36	65.00	
13		1024 X 768	70.07	56.48	75.00	
14		1024 X 768	75.03	60.02	78.75	
15		1024 X 768	85.00	68.68	94.50	
16		1152 X 864	75.00	67.50	108.00	
17		1280 X 1024	60.02	63.98	108.00	
18		1280 X 1024	75.03	79.98	135.00	
19		1280 X 1024	85.02	91.15	157.50	
20		1600 X 1200	60.00	75.00	162.00	
21		1600 X 1200	75.00	93.75	202.50	
22		1600 X 1200	85.00	106.25	229.50	
23	Macintosh	640 X 480	66.67	35.00	30.24	
24		832 X 624	74.55	49.72	57.28	
25		1024 X 768	74.93	60.24	80.00	
26		1152 X 870	75.06	68.68	100.00	
27	1080 / 60i	1080i	60.00	33.75	74.25	Only in the case of H/V separate sync
28	1080 / 50i	1080i	50.00	28.13	74.25	
29	720P	720P	60.00	45.00	74.25	
30	W-XGA	1280 X 768	59.833	47.986	81.00	
31		1280 X 768	69.997	56.137	94.760	

PRODUCT SPECIFICATIONS (continued)

Recommended Signal List (continued)

With Composite/S-video Input(VIDEO1 input).

This function can only be used when the optional video unit has been inserted.

No.	Signal mode			Horizontal frequency (kHz)	Dot clock frequency (MHz)	Remarks
	Signal Name	Resolution	Vertical frequency (Hz)			
1	NTSC NTSC-4.43 M-PAL PAL60	525	59.94	15.73	—	
2	PAL N-PAL SECAM	625	50.00	15.63	—	

With R, G, B Video input (VIDEO1 and VIDEO2 input).

This function can only be used when the optional video unit has been inserted.

No.	Signal mode			Horizontal frequency (kHz)	Dot clock frequency (MHz)	Remarks
	Signal Name	Resolution	Vertical frequency (Hz)			
1	SCART	NTSC PAL	59.94 50.00	15.734 15.625	—	European Standard.

With component input (VIDEO2 input)

This function can only be used when the optional video unit has been inserted.

No.	Signal mode			Horizontal frequency (kHz)	Dot clock frequency (MHz)	Remarks
	Signal Name	Resolution	Vertical frequency (Hz)			
1	480/60i	480	59.94	15.73	—	
2	576/50i	576	50.00	15.63	—	
3	576/50p	576	50.00	31.26	—	
4	480/60p	480	59.94	31.47	—	
5	720/60p	720	59.94	44.96	—	
6	1080/50i	1080	50.00	28.13	—	
7	1080/60i	1080	60.00	33.75	—	
8	1035/60i	1035	60.00	33.75	—	

- The type of video board or connecting cable used may not allow for correct displays adjustment of H.POSITION, V.POSITION, CLOCK and PHASE.
- The monitor may fail to display an animation image correctly when a signal having a vertical frequency of 85Hz or higher is input to it.
- The monitor differentiates the signal modes according to the horizontal and vertical frequencies and the horizontal and vertical sync signal polarities. Note that different signals having all these elements alike may be handled as the same signal.
- Displaying images with more than 512 lines of vertical resolution at Full diplay (compressed display) can result in the interpolation of stripes.

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